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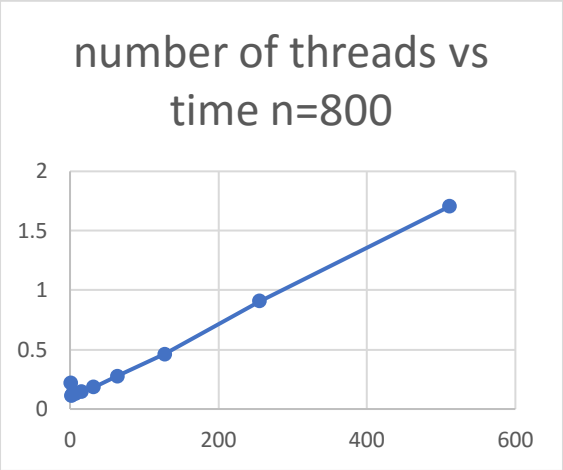
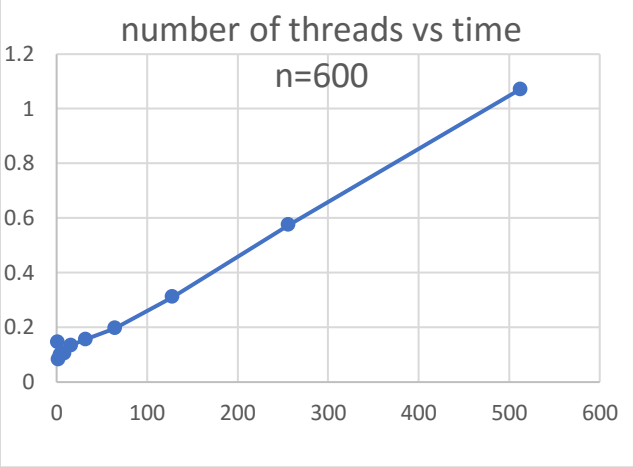
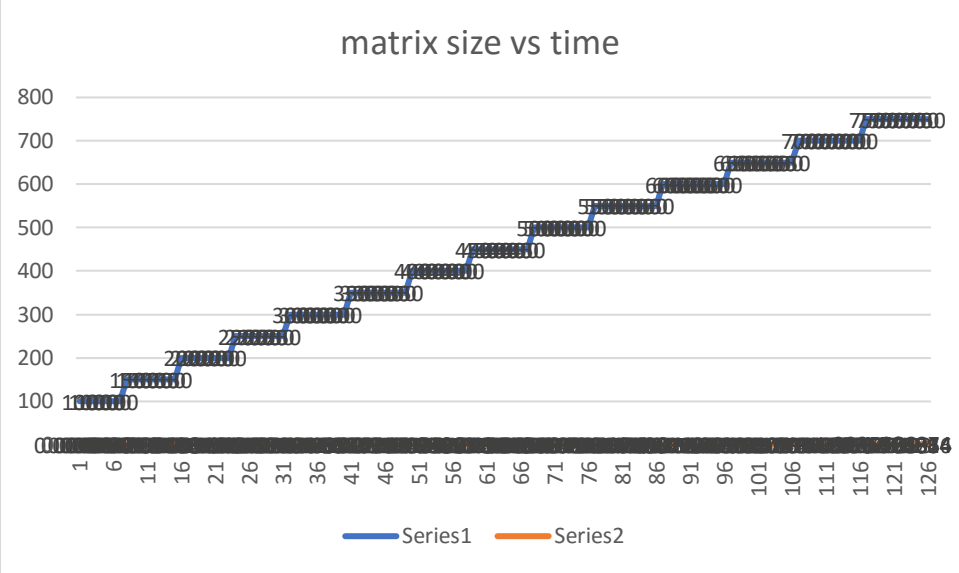
Zhesi Ning
COMP30250_assignment_3_report

Variant： 1-b 2-b 3-a
Below graph shows that the fastest performance we get from the test is around 10-20 threads, once we have more than 20 threads, the performance will drop and form a linear relation with the number of thread.







above is the time vs performance, we cans see that regardless the number of thread we use, the bigger the matrix size the poorer the performance is.

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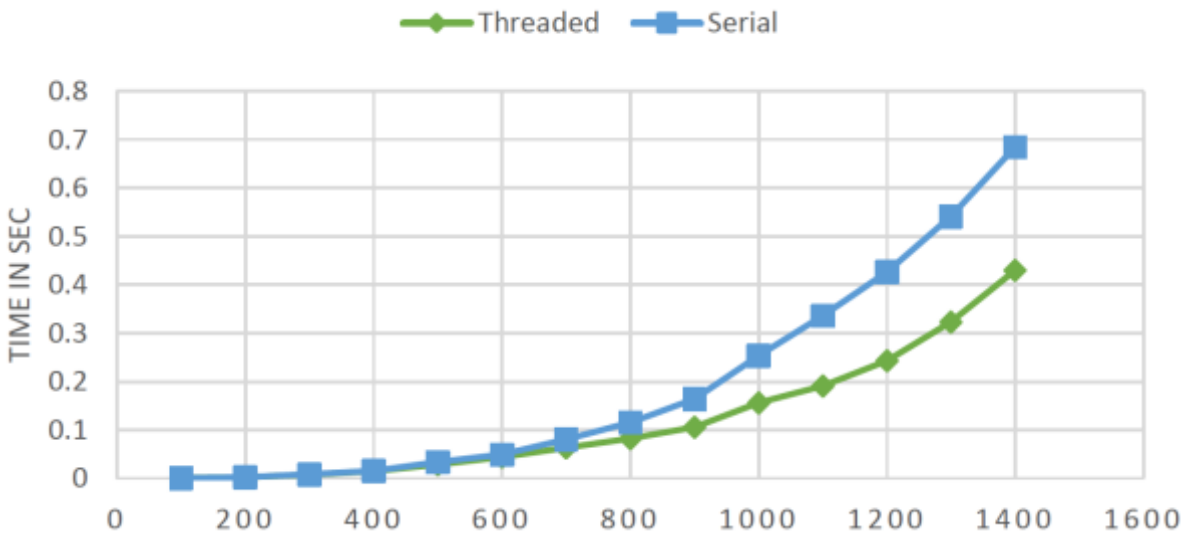
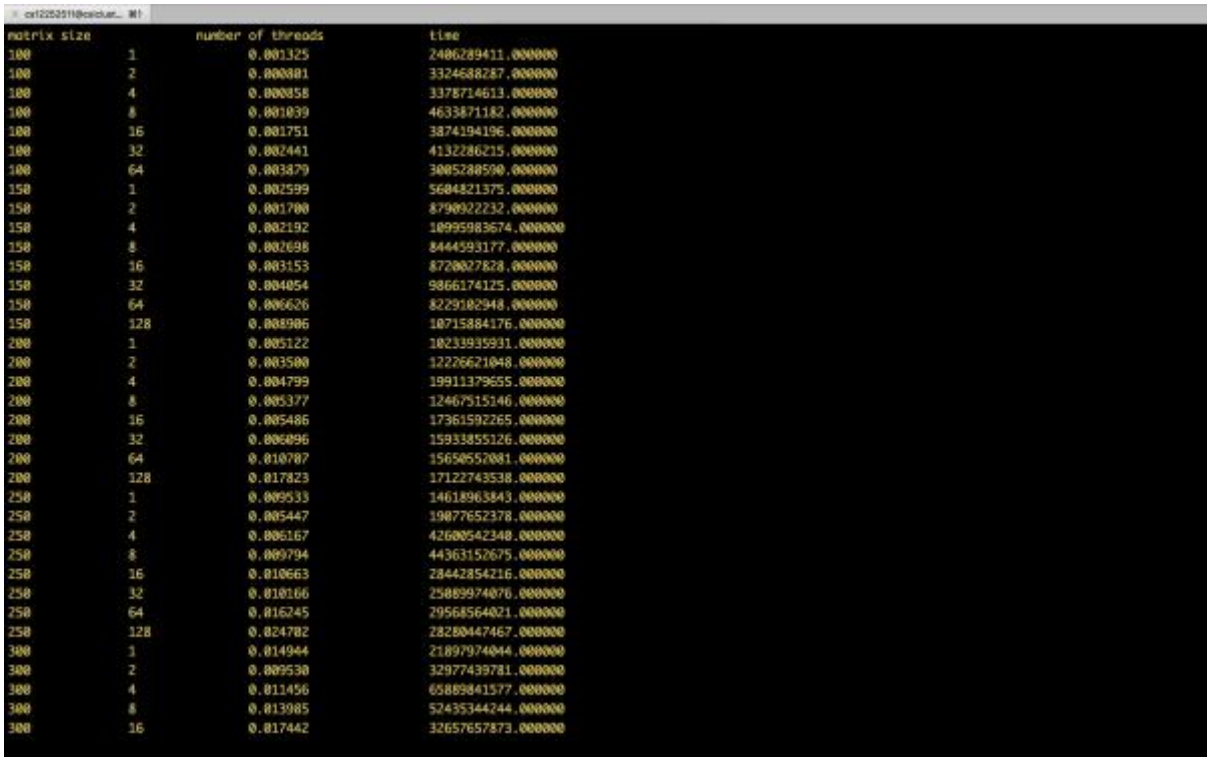
The speedup over a serial counterpart of the program:



above graph show the performance difference between using threaded program and serial program indeed we can see there is a dramatic increase on performance especially on larger matrix operations.
Below are the output of the program:



matrix size	number of threads	time
100	1	0.001325 2406289411.000000
100	2	0.000881 3324688287.000000
100	4	0.000858 3378714613.000000
100	8	0.001039 4633871182.000000
100	16	0.001751 3874194196.000000
100	32	0.002441 4132286215.000000
100	64	0.003879 3005280590.000000
150	1	0.002599 5604821375.000000
150	2	0.001700 8790922232.000000
150	4	0.002192 10995983674.000000
150	8	0.002698 8444593177.000000
150	16	0.003153 8720027828.000000
150	32	0.004054 9866174125.000000
150	64	0.006626 8229102948.000000
150	128	0.008986 10715884176.000000
200	1	0.005122 10233935931.000000
200	2	0.003500 12226621048.000000
200	4	0.004799 19911379655.000000
200	8	0.005377 12467515146.000000
200	16	0.005486 17361592265.000000
200	32	0.006096 15933855126.000000
200	64	0.010787 15650552081.000000
200	128	0.017823 17122743538.000000
250	1	0.009533 14618963843.000000
250	2	0.005447 19877652378.000000
250	4	0.006167 42600542348.000000
250	8	0.009794 44363152675.000000
250	16	0.010663 28442854216.000000
250	32	0.010166 25089974076.000000
250	64	0.016245 29568564021.000000
250	128	0.024782 28280447467.000000
300	1	0.014944 21897974044.000000
300	2	0.009530 32977439781.000000
300	4	0.011456 65889841577.000000
300	8	0.013985 52435344244.000000
300	16	0.017442 32657657873.000000